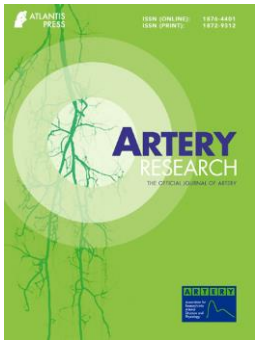

Artery Research

ISSN (Online): 1876-4401 **ISSN (Print): 1872-9312**
Journal Home Page: https://www.atlantis-press.com/journals/artres

P69: RELATIONSHIP BETWEEN CAROTID INTIMA-MEDIA THICKNESS, ENDOTHELIAL FUNCTION, AORTIC STIFFNESS AND CARDIOVASCULAR EVENTS AMONG METABOLIC SYNDROME SUBJECTS

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To cite this article: Ligita Ryliškytė, Rokas Navickas, Roma Puronaitė, Agnė Jucevičienė, Aleksandras Laucevičius (2018) P69: RELATIONSHIP BETWEEN CAROTID INTIMA-MEDIA THICKNESS, ENDOTHELIAL FUNCTION, AORTIC STIFFNESS AND CARDIOVASCULAR EVENTS AMONG METABOLIC SYNDROME SUBJECTS, Artery Research 24:C, 98–98, DOI: https://doi.org/10.1016/j.artres.2018.10.122

To link to this article: https://doi.org/10.1016/j.artres.2018.10.122

Published online: 7 December 2019

Poster Session I — Special Populations I

P67

UNRELIABLE PULSE WAVE VELOCITY VALUES PROVIDED BY ALGORITHM-BASED DEVICE: A STUDY IN MARFAN SYNDROME

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Objective: To evaluate the reliability of algorithm-based aortic pulse wave velocity (PWV) estimated by the Mobil-O-Graph (IEM, Germany) compared to a standard non-invasive measurement of aortic PWV (carotid-femoral PWV), in a population of patients with a genetic disorder causing premature stiffening of the arterial wall: Marfan syndrome.Methods:In this study, 107 patients with confirmed Marfan syndrome were enrolled (mean age 37.7 ± 15.1 years, males 50.4%, blood pressure 117.8 ± 13.6/69.0 ± 8.8 mmHg). PWV estimated by Mobil-O-Graph (which uses an algorithm based mainly on age and pressure acquired by oscillometric method) was compared with carotid-femoral PWV measured by PulsePen tonometer (DiaTecne, Italy). For each method, two measurements were performed simultaneously, in a single session.
Results: Mean values of PWV (±SD) of Marfan patients were 6.1 ± 1.3 m/s by Mobil-O-Graph and 8.8 ± 3.1 m/s by carotid-femoral PWV, with a weak correlation between the two (r = 0.34). The average underestimation by the Mobil-O-Graph was -2.7 ± 5.7 m/s. The values provided by Mobil-O-Graph may be derived in this population from the age square and the brachial systolic pressure (r2=0.98) according to the formula:PWV = age2/1000 + 0.038 * systolic blood pressure.
Conclusions: The Mobil-O-Graph provides PWV values of an ideal subject for a given age and pressure, but may not be able to evaluate the cardiovascular risk expressed by aortic PWV in patients with specific alterations of aortic wall properties, as demonstrated in this population with Marfan syndrome. The use of algorithms for the evaluation of PWV should therefore be discouraged in special populations at high cardiovascular risk.

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THE HIDDEN PREDICTOR OF CARDIOVASCULAR OUTCOME

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Background: Hyperuricemia is common in patients with hypertension, diabetes and obesity. Whether it is an independent cardiovascular risk factor (CVRF) or not remains controversial.
Purpose: To determine the prognostic value of uricemia in the setting of acute coronary syndrome (ACS).
Methods: Retrospective single-center study comprising 1187 patients consecutively admitted into a cardiac intensive care unit for ACS, in whom uricemia was measured during hospitalization. Follow-up targeted all-cause mortality (FUM), reinfarction, percutaneous coronary intervention (PCI), coronary artery bypass grafting (CABG) and acute heart failure (AHF). Statistical analysis was performed using SPSS, version 25.
Results: Mean age was 68.0 ± 13.3y and 30.4% were female. Prevalence of CVRF was as follows: hypertension, 76.9%; diabetes, 33.4%; dyslipidemia, 65.6%; smoking, 35.5%; chronic kidney disease (CKD), 20.5%. Uricemia was 377 ± 119.2 μmol/l, whereas body mass index (BMI) was 27.8 ± 4.4 kg/m^2. In-hospital mortality (IHM) was 6%, while median follow-up time was 6y, encompassing the following event rates: FUM, 36.9%; reinfarction, 19.4%; PCI, 21.1%; CABG, 2.3%; AHF, 16.6%. Uricemia was higher in males ($p = 0.001$) and in patients with hypertension ($p < 0.001$), diabetes mellitus ($p = 0.009$) and CKD ($p < 0.001$) and lower in patients with dyslipidemia ($p = 0.031$) and smokers ($p = 0.03$). Age and BMI displayed weak correlation with uricemia. Hyperuricemia had no effect on the burden of reinfaction, PCI and CABG. In a model of logistic regression including the above-mentioned CVRF, hyperuricemia was an independent predictor of IHM ($p = 0.009$, Hosmer-Lemeshow $p = 0.685$), FUM ($p < 0.001$, Hosmer-Lemeshow $p = 0.056$) and AHF ($p = 0.001$, Hosmer-Lemeshow $p = 0.367$).
Conclusion: Hyperuricemia is an independent predictor of mortality and AHF in the setting of ACS.

References

1. Singh JA. When gout goes to the heart: does gout equal a cardiovascular disease risk factor? Ann Rheum Dis. 2015 Apr;74(4):631-4. doi: 10.1136/annrheumdis-2014-206432.
2. Skak-Nielsen H, Torp-Pedersen C, Finer N, Caterson ID, Van Gaal L, James WP, Maggioni AP, Sharma AM, Coutinho W, Andersson C. Uric acid as a risk factor for cardiovascular disease and mortality in overweight/obese individuals. PLoS One. 2013;8(3):e59121. doi: 10.1371/journal.pone.0059121.
3. Qin L, Yang Z, Gu H, Lu S, Shi Q, Xing Y, Li X, Li R, Ning G, Su Q. Association between serum uric acid levels and cardiovascular disease in middle-aged and elderly Chinese individuals. BMC Cardiovasc Disord. 2014 Feb 25;14:26. https://doi.org/10.1186/1471-2261-14-26.

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RELATIONSHIP BETWEEN CAROTID INTIMA-MEDIA THICKNESS, ENDOTHELIAL FUNCTION, AORTIC STIFFNESS AND CARDIOVASCULAR EVENTS AMONG METABOLIC SYNDROME SUBJECTS

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Objective: The aim of this study was to evaluate predictive value of main arterial markers for cardiovascular (CV) events in subjects with metabolic syndrome (MetS).
Methods: A prospective study enrolled 2728 middle-aged (53.9 ± 6.2 years old, 63% women) MetS patients of the Lithuanian High Cardiovascular Risk primary prevention program without overt CV disease. Subjects were followed-up for 3.9 ± 1.7 years for fatal or non-fatal myocardial infarction (MI) or stroke after their initial assessment including evaluation of carotid intima-media thickness (cIMT), aortic augmentation index (AIx), aortic pulse wave velocity (aPWV), brachial flow-mediated dilatation (FMD), carotid stiffness index, and cardio-ankle vascular index (CAVI).
Results: 83 (3%) patients had at least one cardiovascular event during the follow-up period. Univariate analysis showed association of CV events with higher mean blood pressure, aPWV, AIx, cIMT, and lower FMD (all $p < 0.05$). Cox proportional hazard regression analysis revealed association between CV events, increase in cIMT (HR 1.31, 95% CI 1.14—1.50, $p < 0.001$), aPWV (HR 1.29, 95% CI 1.04—1.60, $p = 0.019$), AIx (HR 1.53, 95% CI 1.16—2.02, $p = 0.003$) and decrease in FMD (HR 0.83, 95% CI 0.71—0.97, $p = 0.016$) even after the adjustment for age, gender, and common CV risk factors.
Using two-level survival trees analysis, we discovered relation between cIMT > 794 and higher CV risk ($p < 0.001$) and even higher risk with aPWV > 11.1 m/s ($p = 0.023$). Whereas cIMT£794 mcm together with the FMD cut-off point of 6.5% also resulted in higher risk ($p = 0.003$).
Conclusions: Our follow-up study reveals association between CV risk, increased aortic PWV, cIMT and decreased brachial FMD among middle-aged MetS patients.

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FINGER-TOE PULSE WAVE VELOCITY (FTPWV) MEASURED BY POPMÈTRE® DEVICE IN PATIENTS WITH ANKYLOSING SPONDYLITIS

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